

DOCUMENTED BRIEFING

DB-197-OSD

RAND

Engaging China in the International Export Control Process

Options for U.S. Policy

Charles A. Goldman, Jonathan D. Pollack

*Prepared for the
Office of the Secretary of Defense*

National Defense Research Institute

19970519 022

DTIC QUALITY INSPECTED 3

Preface

This documented briefing is intended to provide options for U.S. policy that will enhance China's participation in the control of international transfers of destabilizing military or dual-use technology. The briefing analyzes China's involvement in and commitment to international export controls. It explores the need to engage China more fully in the international export control process and describes U.S. objectives and potential policy initiatives toward that end. Using knowledge about the operation of the Chinese bureaucratic system, especially in defense-related research and development, the briefing describes a number of strategy options for U.S. policy, making it of interest to policymakers concerned with export control as well as to those specializing in the Chinese policy-making process.

The research was sponsored by the Defense Technology Security Administration under the Office of the Undersecretary of Defense for Policy in a project entitled *China in the Post-CoCom World: Managing Technology Flows*. It was carried out within the International Security and Defense Policy Center of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, and the defense agencies.

The authors are much indebted to Michael Kennedy of RAND and to Bates Gill of the Stockholm International Peace Research Institute for their careful critiques and numerous suggestions for improving an earlier version of this briefing. The authors also acknowledge the contributions of Seth Axelrod, who prepared a series of background reports on export control regimes and laws for this project. Tables 1 and 2 in this documented briefing are adapted from his work.

The project was further enriched by candid discussions with numerous U.S. government officials as well as business leaders and other observers and analysts of export control. Although they cannot be acknowledged individually, the authors are grateful to all who contributed their time and expertise.

NDRI

Engaging China in the International Export Control Process

Options for U.S. Policy

**Charles A. Goldman
Jonathan D. Pollack**

Defense Technology Security Administration

RAND

This briefing reports on the results of research undertaken for the Defense Technology Security Administration on "Engaging China in the International Export Control Process: Options for U.S. Policy."

International Export Control System Handicapped Without Fuller Chinese Participation

NDRI

- **China does not participate in most international export control agreements**
- **U.S. strategies have not brought enhanced Chinese participation**
- **Failure of China to participate in export control process poses major risks to regional security**

Defense Technology Security Administration

RAND
2

China presents a distinct and potentially growing problem for international export control. The Chinese are not a signatory of or an active participant in most export control agreements, and U.S. strategies have not brought full or effective Chinese participation in this multilateral process, even though the United States has tried to employ bilateral understandings with the Chinese as an alternative or supplemental policy option. As a result, destabilizing arms proliferation could occur in various regions, possibly overriding the present system of controls. In addition, there have been repeated instances of Chinese sales of technology that the United States believes have facilitated destabilizing weapons programs, with the United States sometimes judging these transactions (for example, the sale of ring magnets to Pakistan) as occurring without the knowledge or approval of senior Chinese policymakers.

Policy Context	
NDRI	
United States	Wants to restrain transfers of technology linked to weapons of mass destruction
	Believes China has made such transfers and could do so again
China	Chinese involvement not solicited in the past; hence, bound to few international norms for export control and nonproliferation
	Has had mixed adherence to international agreements
Technology Transfers	Depend increasingly on intellectual property and scientific exchange
<div> <div>Defense Technology Security Administration</div> <div>RAND</div> </div>	

To assess these issues, we first examine the relevant policy context. In the post-Cold War/post-CoCom (post-Coordinating Committee for Multilateral Export Controls) era, the United States and its allies and security partners are trying to devise new mechanisms and arrangements to restrain or prevent the sale or transfer of military technology or dual-use technology linked to weapons of mass destruction (WMD) or destabilizing conventional weapons. Chinese involvement in the export control process was not solicited historically. Indeed, the United States believes that the Chinese have made destabilizing transfers in the past and they could do so again. Because of its previous lack of involvement in this process, China is tied to few binding international norms with respect to export control and nonproliferation, and its adherence to different international agreements is mixed at best.

U.S. policymakers also face growing problems in controlling technology flows. The world is entering an era where the challenges of technology transfer and technology control are becoming much more complicated. Technology transfer activities will rely less on delivery of finished military systems, and an increasing number of suppliers will be involved in these processes. Now and in the future, technology transfer will often require delivery of only certain critical components of a weapon system or production facility. As technological capability spreads, technology transfer will rely increasingly on sharing engineering know-how, techniques, and designs, much of which seems to fall principally in the realm of civilian technologies. These intellectual property transfers present much greater challenges for international regimes than transfers of finished weapons systems. Scientific transfers and cooperation are harder to detect since they

do not require shipments of large physical objects. In addition, scientific transfers have many legitimate peaceful purposes, making it difficult to distinguish a scientific exchange for weapons system purposes from transactions for power generation, space exploration, or civilian manufacturing technology.

Because of changes in the nature of technology transfer and the radically altered international environment following the end of the Cold War, international agreements have become much less powerful instruments in controlling exports of destabilizing technologies. This briefing starts from the proposition that more fully engaging China in the international export control system will foster a reduction in destabilizing transfers, even though the linkage between regimes and transfer behavior appears to be weakening worldwide.

China Bound to Few International Norms for Export Control and Nonproliferation	
NDRI	
Formally supports some regimes	Member of the Nuclear Nonproliferation Treaty (NPT)
	Signatory to Chemical Weapons Convention (CWC)
	"Adherent" to the Missile Technology Control Regime (MTCR)
Does not formally support other regimes	Australia Group
	Wassenaar Arrangement
	Nuclear Suppliers Group
May support	Bilateral agreements with the United States as an alternative
Defense Technology Security Administration	
RAND	

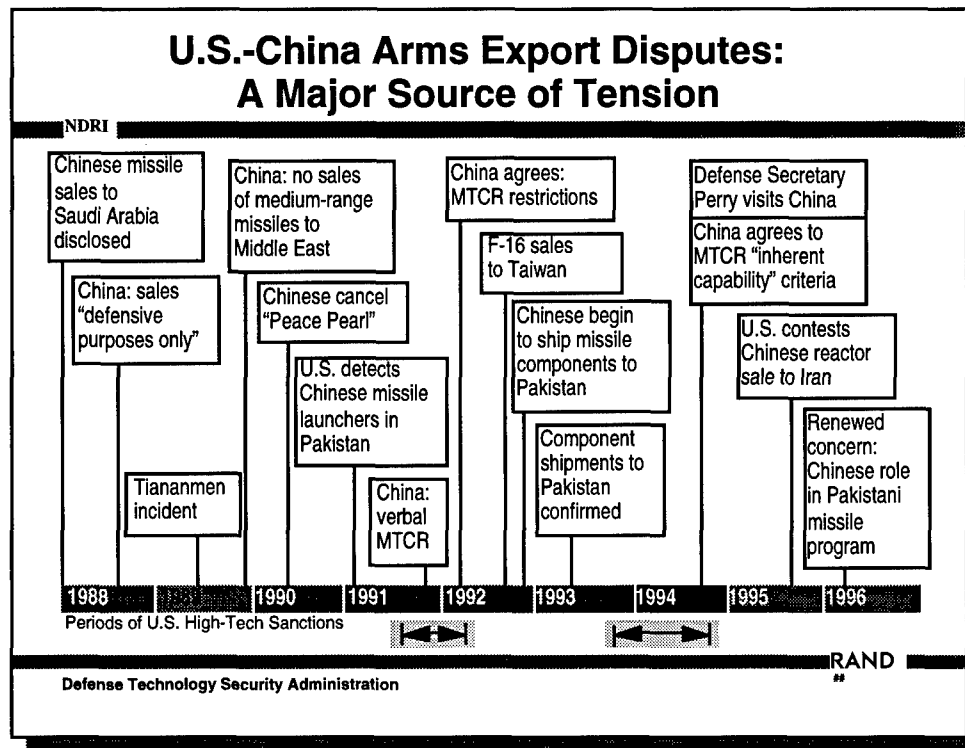
An important baseline for discussing China's involvement in international regimes is its past record on export control and nonproliferation. Although China is not bound to a widespread set of multilateral norms, during the late 1980s and early 1990s China began to edge toward greater involvement in the arms control and export control process. In 1992, the Chinese became a formal signatory to the nuclear Nonproliferation Treaty. The Chinese are also a signatory to the Chemical Weapons Convention, though (like the United States and Russia) they have yet to ratify the CWC.

Tables 1 and 2 (appended to this documented briefing) offer additional perspective on China's position relative to existing international regimes. Table 1 describes the principal treaties, agreements, and organizations associated with nuclear, chemical, and biological weapons and missile delivery systems. Table 2 indicates those countries that are formal members of the four important export control regimes—the Missile Technology Control Regime (MTCR), the Australia Group, the Nuclear Suppliers Group, and the new Wassenaar Arrangement. In addition, the table indicates countries that have agreed to cooperate or might cooperate in one or more regimes. The table shows that of these major export control regimes, China is a formal member of none, although China has agreed to cooperate in the MTCR.

China is not a member of these regimes because of a complex set of international factors. It is true that the Chinese have often not demonstrated much willingness to seek membership in the supplier regimes. China, however, has frequently been excluded from these regimes by the other

supplier countries. Since most of the Cold War supplier regimes involved significant exchanges of intelligence as well as free transfer of goods among the supplier members, the United States and its allies felt serious unease about or opposed outright intelligence sharing and free trade in dual-use technology with China.

As an alternative, however, bilateral agreements between the United States and China have provided a partial means for inducing China to refrain from destabilizing transfers.



Since 1988, the United States has repeatedly claimed that Chinese exports of missiles and missile components posed a challenge to MTCR provisions, although China was not a participant in the initial discussions related to controlling missile technology exports. The United States has been particularly concerned with Chinese deliveries to Pakistan. Through bilateral discussions the United States has sought to clarify both what the Chinese have sold or transferred, and to try to gain China's commitment to restrain their future export activities. In some instances, China has responded favorably to U.S. efforts to restrict its missile transfers, specifically missiles in the M-9/M-11 category to Iran and Syria and possible follow-on sales to Saudi Arabia beyond the CSS-2 missiles transferred in 1987 and 1988. So the record here shows some Chinese willingness to respond to U.S. concerns. In addition, since 1991 the Chinese have provided more explicit assurances of their commitment to MTCR guidelines. Although not wholly binding, they do suggest movement toward restricting those activities that China has undertaken in the past.

Findings from the Study	
NDRI	
United States	Lacks comprehensive agreement on goals Has limited, intermittent, and unexploited leverage over Chinese policy
China	Has not internalized implications of weapons of mass destruction proliferation Could internalize implications of proliferation implications if presented with appropriate U.S. policies
What is needed	Combination of strategies, both at high level and working level New regime structures to control emerging forms of technology transfer
Defense Technology Security Administration	
RAND	

The major findings of this study encompass conclusions about both U.S. and Chinese policy. Those conclusions motivate the development of strategy options for the United States to encourage greater Chinese participation in international export control and nonproliferation regimes.

The United States presently lacks a comprehensive strategy on the goals of U.S. policy and the means to implement them. American leverage over China is limited and intermittent, but it can be better exploited than it has been to date. In addition, these policy challenges are compounded by the erosion of the Cold War consensus that enabled much more binding control over technology flows, changes in the character of technology that make export denial more problematic, and the increasing complexity and diversity of global commercial interests. In large measure, the Chinese have yet to internalize the implications of WMD proliferation for their own security interests. The United States and its allies need to foster efforts to encourage Chinese policy movement in this direction. Thus, some Chinese interests and needs overlap with those of the United States, and ways can be found to mesh them more effectively. But a combination of strategies is required both for high-end political understandings and working-level arrangements among China, the United States, and other nations.

Also, the international export control process will require new multilateral structures and arrangements to deal with emerging forms of technology transfer. As technology transfer increasingly relies more on human expertise and technological processes than on physical components, it is becoming much more difficult to apply controls to technology transfer. Since this is a formative policy area, the United States should seek to enlist early Chinese

participation in the international process of developing new regimes. Finally, to make progress in linking China to a system of export controls, the United States and other nations need to encourage development of a much more explicit culture of control within the Chinese bureaucratic process and at the level of individual enterprises.

Study Questions

NDRI

- ◆ What are possible U.S. policy goals?
- How does the Chinese decision-making system function?
- How can the United States better achieve its goals?

RAND

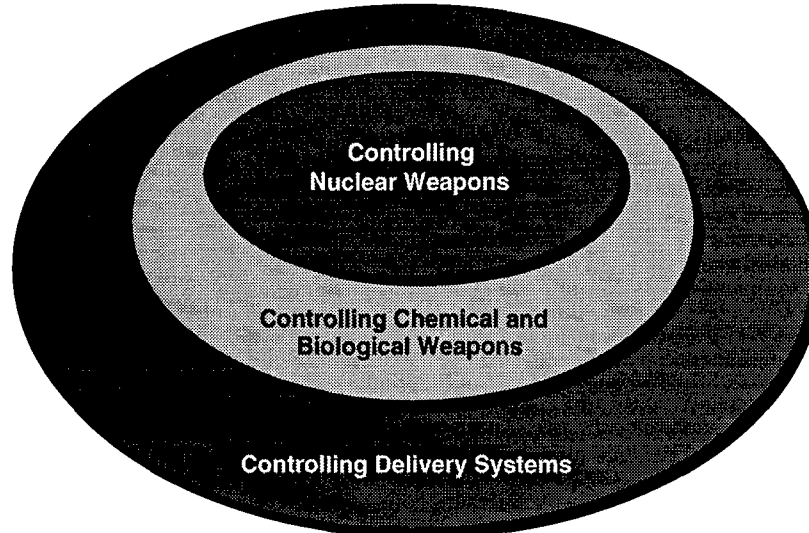
Defense Technology Security Administration

7

We next turn to the major study questions. First, what are a set of possible U.S. policy goals on technology transfer involving China? Second, how does the Chinese decision-making process function in this area? Third, how can the United States better realize its goals?

U.S. Proliferation Objectives Can Build on Shared Interests in Nuclear Weapons

NDRI



Defense Technology Security Administration

RAND

We begin by identifying possible objectives that the United States needs to communicate effectively to China. These efforts have been hampered by a lack of consensus within the U.S. government on the highest priority goals in relations with China. This lack of consensus has been evident over a broad range of bilateral policy concerns but is especially germane to technology transfer and export control.

Chinese negotiating strategy emphasizes the identification and articulation of broad principles that then permit more practical arrangements and agreements in specific areas. In this regard, we have identified a hierarchy of three objectives that we believe show particular promise.

Nuclear nonproliferation is already a shared goal, given that both the United States and China are signatories to the NPT and that the Chinese have identified restricting the spread of nuclear capabilities as a national security and arms control priority. But there is less explicit Chinese identification with preventing the spread of chemical and biological weaponry. We recommend that the United States encourage the Chinese government to deepen its commitment to control the spread of chemical and biological weapons, which will entail equivalent steps by the United States and others. The third step is to build on a shared desire to prevent deployment of weapons of mass destruction. Given the increased diffusion of technology relevant to chemical, biological, and nuclear weapons, it is logical and appropriate to require enhanced international control over transfers of delivery systems, such as medium- and long-range ballistic missiles. Chinese relations with various third world states complicate this last objective. Some

of these states, including at various times Pakistan, Iran, Iraq, Syria, Libya, and North Korea, have been closely aligned with China in the past and have sought to enlist Chinese assistance with their indigenous missile programs; China also provided substantial assistance to Saudi Arabia in its deployment of ballistic missiles purchased from the Chinese.

The Chinese agreement to control nuclear weapons therefore remains the most promising basis on which to broaden a shared U.S.-Chinese commitment to control WMD capabilities and the means to deliver them. The United States should move ahead on this basis and adopt a clear set of goals that builds on existing shared interests with China.



To achieve these broad objectives, more specific policy goals must also be met. These goals involve a mix of multilateral and bilateral strategies as well as the need to implement these goals within a Chinese domestic context. We have identified four major policy components that would have to be part of this effort: (1) gaining increased Chinese adherence to and fuller participation in international agreements; (2) improving the export control system in China; (3) gaining greater access into and transparency of the Chinese military system, including military enterprises; and (4) improving the enforcement of Chinese laws on Chinese enterprises.

Fuller Chinese consent to and participation in existing international agreements would complement and extend China's formal assent to nonproliferation agreements. Improved export controls within the Chinese system, i.e., formal regulations and norms, could provide the basis for enhanced support for export control in China. Increased U.S. and allied interaction with the Chinese defense industries and export firms will increase awareness of nonproliferation goals in China and complement intelligence and enforcement activities. Finally, successful U.S. policy must ultimately lead to the Chinese enforcing export control laws and regulations to control the behavior of specific enterprises. In many cases, the most successful approaches will be multilateral, but the United States should also be prepared to work within a bilateral context.

Study Questions

NDRI

- What are possible U.S. policy goals?
- ♦ How does the Chinese decision-making system function?
- How can the United States better achieve its goals?

Defense Technology Security Administration

RAND
10

We next examine the Chinese decision-making system. This system is complex, imperfectly understood, and frequently difficult to observe. But enhanced knowledge of the Chinese decision-making process will be crucial to realizing U.S. policy goals.

Why Has China Remained Outside the Export Control Process?

NDRI

- China was excluded from this process in the past
- Nationalistic sensitivities about intrusiveness
- Insufficient connection to Chinese national security interests
- Weapons transfers are alluring
 - Financial motives: Chinese enterprises and power structure benefit from hard currency earnings
 - Geopolitical motives
- Generational transition could exacerbate export problems

RAND

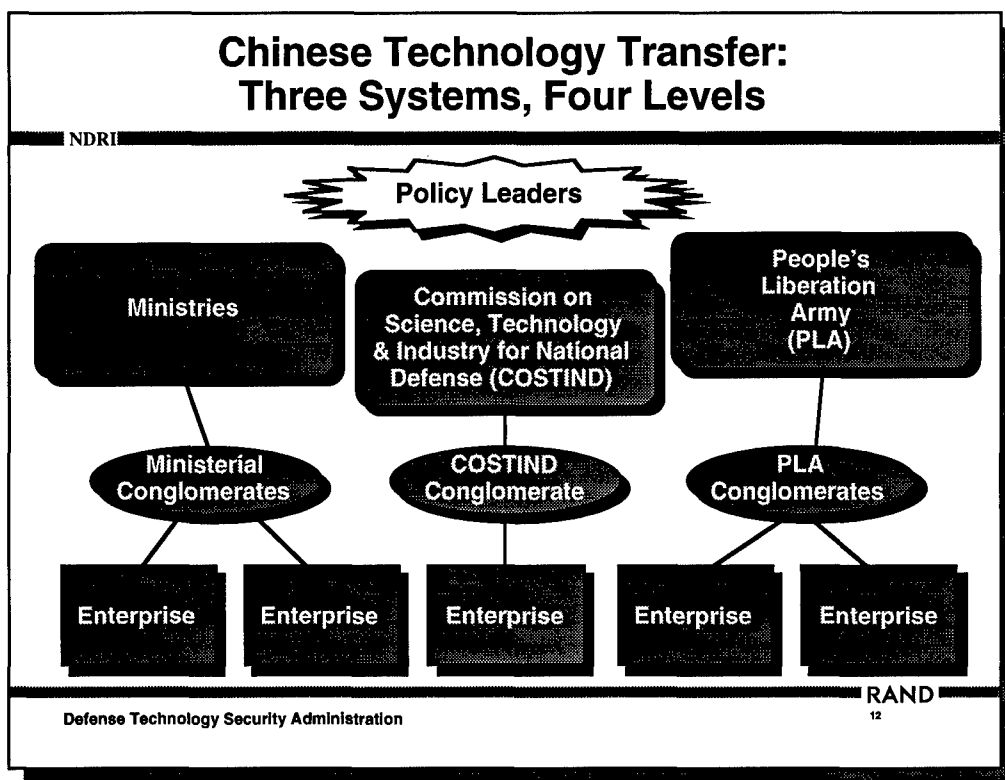
Defense Technology Security Administration

Why has China remained largely outside the export control process? First, China was long excluded from this process. Its membership in export control regimes was not sought by the United States or other powers. Second, there are questions of national sovereignty and of nationalistic sensitivities; the Chinese remain very wary of actions or policy requirements that appear intrusive in their own decision-making process and policy-making procedures. Third, there is insufficient support within China to connect export control to China's national security interests. Fourth, weapons exports (including some sensitive weapons technologies) remain alluring to Chinese institutions and policymakers for financial as well as geopolitical reasons. Chinese enterprises, for example, have explicit sanction to pursue hard currency earnings, given that the state is no longer fully prepared to subsidize the activities of these organizations. The increasingly difficult financial straits of the Chinese defense industries have compelled an export orientation in both military and civilian goods. There has been a wide array of activities both in the military and nonmilitary sector to enhance the attentiveness of Chinese enterprises to market forces. This has been very relevant to the sales of arms in South Asia and the Middle East, given that the Chinese have seen clear opportunities to sell and that states have been willing to buy. Fifth, there are also geopolitical motives. The Chinese hope to secure credible political ties with states potentially useful to their long-term interests, and more generally to keep China's options open at a very fluid time in the international system.

China's weapons exports are also related to internal political factors. The so-called "Princelings"—the sons and daughters of senior Chinese leaders who dominated Chinese national security policymaking in the early decades of

Communist rule—wield substantial power in this area. The offspring of these leaders have had extensive access to vital resources within the system. In the past, they have been able to exercise a high degree of autonomy, both for personal financial gain as well as for the gain of the institutions that they represent. Their activities have been subject to increasing restraint by senior leaders, so the looming generational transition may exacerbate the kinds of export control problems the United States has faced with China.

It would nonetheless oversimplify matters if too much significance is placed on this last factor alone. A comprehensive understanding must rest on the full range of interests and factors shaping Chinese attitudes toward export control and the People's Republic of China's (PRC's) past and future dispositions in this area.



To understand where and how arms technology and technology transfer decisions are made in China, we need to understand the larger dynamics of this process. No single factor satisfactorily explains Chinese decisionmaking because it is a very complex process and because our knowledge of the process is far from satisfactory. This chart, for example, seems to suggest clear lines of communication and chains of command. The reality is much more complex and diffuse, and often depends more on the relationships between individuals than between institutions. But we can in a broad analytic sense identify four principal levels of the system: first, high-level decisionmaking and the degree to which there is a authoritative process for export activities; second, the military leadership in different areas—each with its separate channels and systems into Chinese military research and development (R&D) and into the import/export process; third, the industrial and import/export structure that is “owned” by these high-level military leaders; and fourth, the actual laboratories, production facilities, and R&D enterprises that produce, and sometimes export, weapons, components, and technical information. Each level helps contribute to our understanding of how policy operates in China. What is notable is that there is both autonomy in these different realms but also some lateral linkages—not so much as a function of institutional ties, but much more in relation to personal associations that exist in the Chinese system. We next examine some of the critical actors in this process.

Uniformed Services Have Frequently Shaped Export Decisions

NDRI

High-level military leaders

Often have had great clout and claim on financial resources

Need foreign exchange to accelerate military modernization

Have exhibited military entrepreneurship (for personal and institutional gain) that has been difficult to constrain

Senior generals

Have not always been fully accountable to political leadership, especially Ministry of Foreign Affairs

Defense Technology Security Administration

RAND

13

An examination of power and where it resides in the Chinese export control system reveals that the uniformed services and some of the companies identified with them have often dominated this process, with the services historically able to procure various goods and technologies at state-subsidized prices from the defense industrial enterprises and to resell the technologies through their designated weapons export firms to earn substantial foreign exchange. Thus, high-level military leaders have frequently possessed major clout in this arena, especially when the People's Liberation Army (PLA) saw opportunities to accelerate military modernization through weapons exports earnings. Although the services appear less able at present to sustain these arrangements, these practices remain a source of continued conflict between the uniformed military and the defense enterprises, as discussed further below.

In the past, many of these senior military officials were not always accountable to political leadership, in particular to the Ministry of Foreign Affairs. This clearly represented a policy problem for the United States, given that the ministry has been the principal interlocutor in previous negotiations with U.S. officials. In view of the financial imperatives both in the military sector and in the civilian sector, military entrepreneurship will remain a central factor complicating efforts to control or regulate export transactions.

Ministries Have Different Interests than PLA

NDRI

PLA

Needs advanced weapons from any source

Has enterprises that directly compete with defense industries

No longer makes large equipment purchases from ministries

Increasingly reluctant to sponsor R&D outside its sphere of control

Ministries

Need to diversify

Oversee fractionated and frequently inefficient R&D processes

Defense Technology Security Administration

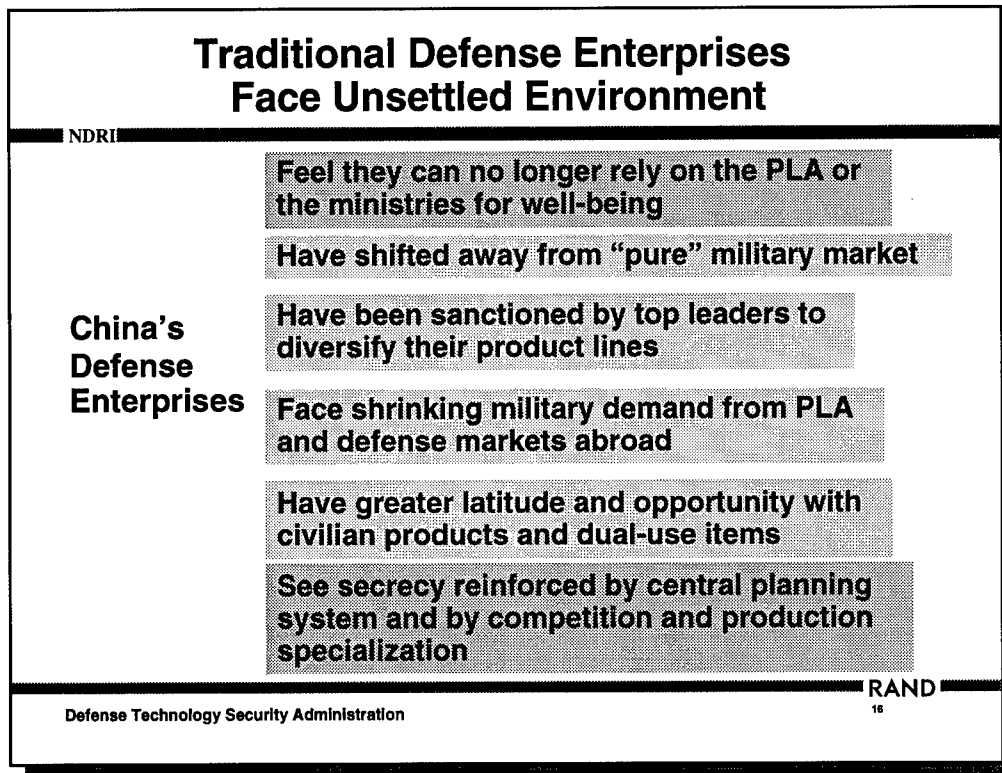
RAND

14

Counterposing military influence has been the interest of the industrial ministries in China. These institutions are principally responsible for defense production and the defense industrial system. There are clear differences in interest between the ministries and the PLA under the circumstances that now prevail in China, with the state no longer subsidizing the activities of its institutional subcomponents to nearly the same degree. The PLA, of course, desires advanced weaponry sooner no matter what the source, and it seeks to amass the necessary foreign exchange to purchase these systems if it can acquire them from abroad. This is one of the many reasons why the PLA launched its own independent sales efforts, often in competition with the defense industries and export firms that initiated extensive involvement in commercial weapons sales in the early 1980s. The ministries, moreover, need resources for longer-term indigenous technological development, through which they hope to again serve as the provider of choice for the PLA. But the ministries also recognize the need to diversify. The PLA is no longer prepared to make large-scale equipment purchases from its own military system, and the PLA is increasingly reluctant to sponsor R&D activities if these activities fall outside its sphere of control. This process is marked by conflicts of interest and duplication of effort. Overall, the lack of agreement on means and methods of development indicates that the Chinese research and development process is inefficient in terms of addressing broader economic modernization goals, even though the system is clearly capable of producing items and technologies that undermine efforts to limit destabilizing export activities.

COSTIND's Formal Responsibilities Mask Limitations in Power	
NDRI	
COSTIND	Is nominally responsible for defense R&D coordination and integration
	Oversees weapons export control and production
	Has primary intelligence function for military science and technology
	Has R&D and commercial links to space launch activities and advanced computers
DoD	Should use COSTIND as an appropriate point of contact
	Should not overestimate COSTIND's clout
<div> <div>Defense Technology Security Administration</div> <div>RAND 15</div> </div>	

We next to turn to COSTIND—the Commission on Science, Technology, and Industry for National Defense. On paper, COSTIND has a very important mandate in the Chinese system. Sitting between the production function of the defense industries and the military requirements generated by the PLA, COSTIND is nominally responsible for defense R&D coordination and for oversight of weapons export decisions. But it is far from clear that COSTIND wields the kind of effective authority to dominate this process. It is a player at the table but not one that always has the requisite resources at its disposal. This said, there are important functions that COSTIND performs. It is the primary intelligence gatherer for defense science and technology. COSTIND has particular linkages to certain commercial activities, notably space launch activities and advanced computers associated with the nuclear weapons program. This reflects the leadership composition of COSTIND, since many of its top leaders are tied by blood or marriage to the founding fathers of these programs. In addition, COSTIND is able to acquire various technologies abroad, and that, too, gives it significant clout within the system. As a result of its coordinating function, COSTIND also serves as an appropriate point of contact for DoD. But some skepticism is warranted about its claim to co-equal status with other institutions within the Chinese defense system. In addition, COSTIND's long-standing involvements in various high-technology endeavors give it less influence and leverage on the more "traditional" producers in the system. Moreover, many of these other units actively seek to circumvent COSTIND's authority to maximize commercial gains outside the plans mandated by the state.



China's industrial enterprises—purely military, purely civilian, or mixed military and civilian—are much more focused on the view from the bottom than the view from the top. Enterprises in China recognize that they can no longer rely either on the PLA or on the ministries for their well-being, and maybe not even for their survival. As a result, the enterprises, with encouragement from the state, have shifted steadily away from a pure military market. After all, there is a diminished military demand from the PLA and also a diminished military demand from external defense markets, where the Chinese are frequently not as competitive as other weapons suppliers.

The good news for these enterprises is that they have far greater latitude and opportunity to develop and market civilian products and dual-use items. The bad news is that this conversion process continues to perform very poorly, with most military enterprises either losing money or barely breaking even. Few can be considered genuinely profitable at present.

The character of the past system of central planning has created information barriers among Chinese defense enterprises and between the enterprises, military organizations, and government bureaucracies. Many enterprises consciously seek to isolate themselves from these other parts of their system, because they fear sharing information with other enterprises and with the higher-level bureaucracy. This behavior exacerbates the lack of transparency in operational and export planning, since many of these enterprises believe that their incentives rest more on secrecy and denial of information to others rather than on the sharing of information. Because export controls depend on

efficient information flows within the system, implementation of effective export controls is likely to remain challenging.

Study Questions

NDRI

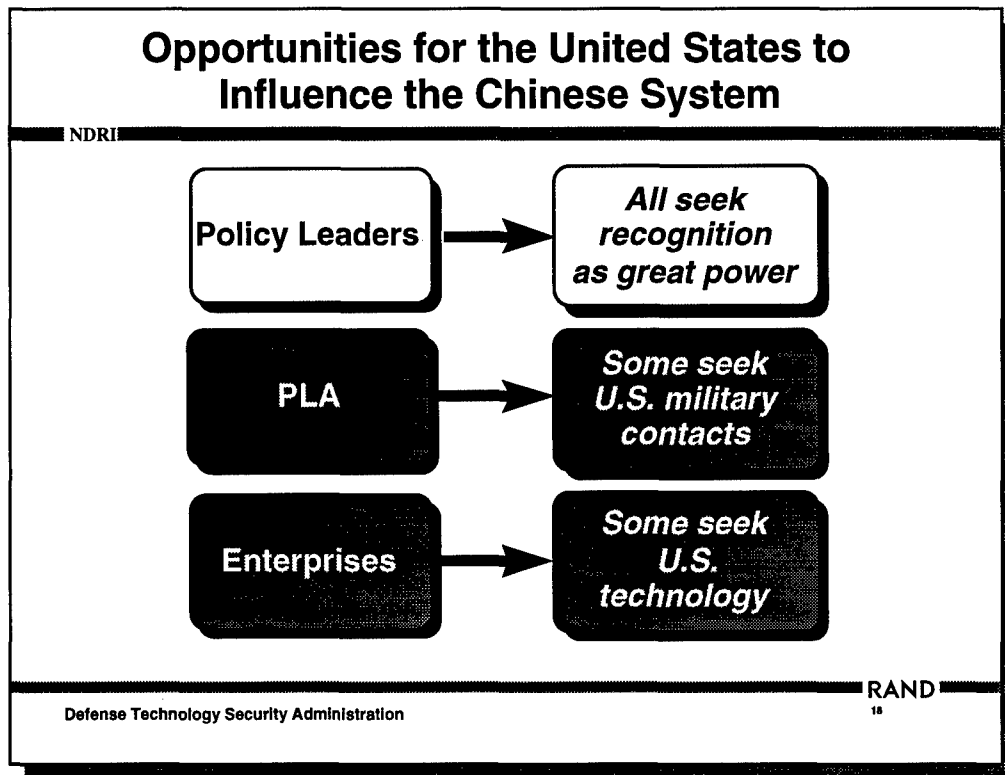
- What are possible U.S. policy goals?
- How does the Chinese decision-making system function?
- ◆ How can the United States better achieve its goals?

RAND

Defense Technology Security Administration

17

Building on our understanding of U.S. policy goals and the insight into the Chinese system for decisionmaking, we now turn to what the United States can do to achieve its goals within the Chinese system.



Based on our understanding of the Chinese decision-making system, we have identified several avenues for enhancing U.S. leverage over Chinese export behavior. We recognize that Chinese behavior is influenced by the policies of numerous countries, and not simply by those of the United States. Still, there are particularly important characteristics of the U.S. economic, political, and technological position in the world. These characteristics provide the United States with unusual opportunities to influence the Chinese system.

First, the Chinese political leadership seeks recognition and affirmation as a great power. The United States is clearly able to help confer this recognition. Second, there are also sectors within the Chinese uniformed services that value military relations with their counterparts in the United States. In this realm, the United States (and DoD in particular) is in a position to increase these ties. Third, Chinese enterprises throughout the system want to acquire and license sophisticated technology. Much of that technology comes from U.S. firms. U.S. firms, of course, are eager to sell technology to China. As it has in the past, the United States retains the option of employing legal sanctions against Chinese firms or against China to restrict individual categories of Chinese exports to the United States or U.S. exports to China.

Promising U.S. Strategy Options

NDRI

- High-level politics
- Working-level relations on technology control
- Defense-defense engagement
- Tie U.S. technology access to Chinese actions
- Involve U.S. firms with interests in Chinese market
- Include Chinese in agreement negotiations
- Agree on acceptable markets and products
- Urge China to adopt Hong Kong model

Defense Technology Security Administration

RAND

19

We have developed a number of potential options for U.S. strategy. One option is to work at the high political level. There are also options for working in two additional domains: (1) scientific, technical, and bureaucratic cooperation and (2) interaction between the defense establishments of the two countries. The United States can link technology access to Chinese integration in the export control system, although this can be complicated by the actions of other states also able to provide relevant technologies to Chinese end users. The United States can seek to involve firms that have an interest in the Chinese market. The United States can press for much fuller inclusion of China in international agreement negotiations. The United States might attempt to develop an explicit understanding with China on the products and markets that are deemed acceptable for export, and the United States can use its influence to foster the Hong Kong export control process as one model to be propagated and developed further in mainland China.

In many of these strategies, support of U.S. allies is desirable and even necessary. This briefing, however, focuses specifically on the potential U.S. role in executing the eight strategies shown above.

Only a Combination of Strategy Options Can Cover All Policy Goals				
	NDRI			
	International Agreements	Export Control Systems	Access to Military System	Enforcement
High-level politics	◆		◆	
Working-level relations		◆		◆
Defense engagement			◆	
Tie U.S. technology access	◆	◆		
Involve U.S. firms		◆		◆
Chinese in negotiations	◆		◆	
Agree on acceptable markets	◆			
Promote Hong Kong model		◆		◆
				RAND
	Defense Technology Security Administration			

Earlier in the briefing, we described four principal policy goals for the United States: (1) gaining Chinese adherence and full participation in international agreements; (2) improving the export control system in China; (3) gaining greater access to and transparency into the Chinese military system, including military enterprises; and (4) improving the enforcement of Chinese laws on Chinese enterprises. This chart links the strategies we have identified to the primary policy goals. Although other linkages exist, we judge that the ones above are of primary importance. As the chart makes clear, none of the strategy options by themselves can address all four policy goals. Rather, a combination of strategy options is required to subsume all the policy goals. In particular, it is necessary to combine high-level strategies with working-level strategies to advance all four policy goals.

Other Strategies Appear Unworkable

NDRI

- **Compensate Chinese enterprises for refraining from technology sales**
- **Link U.S. security commitments and arms sales to Taiwan to Chinese technology transfer**
- **Link U.S. force deployments in Asia to Chinese security cooperation**

But overall bilateral and multilateral relations will shape Chinese incentives to cooperate

RAND

Defense Technology Security Administration

21

We also considered several other strategies that do not appear to be feasible in the current context of U.S. domestic politics and in the current state of U.S.-China relations. One of these strategies is direct compensation to Chinese enterprises that forgo technology sales. Another is an explicit link between U.S. security commitments and arms sales to Taiwan and Chinese participation in the international export control system. A broader version of that option would be to reconsider the entire structure of U.S. force deployments in Asia as a function of Chinese security cooperation in the region.

Future relations among China, the United States, and U.S. allies will determine when, if ever, any of these options might be feasible. U.S. options in security policy are certainly influenced by the concerns and behavior of allies including Japan, South Korea, and European nations. For now, the state of the relationship and the domestic political environment in the United States make these options unfeasible. We therefore do not evaluate these options further.

Expand High-Level Political Contacts

NDRI

- **Current and past contacts have emphasized Secretary-level contacts**
 - **State-MoFA, DoD-PLA, Commerce-MoFTEC**
- **High-level politics at risk from Chinese bureaucratic turf battles**
 - **MoFA, PLA, MoFTEC**
- **Presidential-level backing in China and United States necessary to enforce greater commitments**

Defense Technology Security Administration

RAND
22

Turning to the first of the strategy options, fuller commitment to export control, both on the U.S. side and on the Chinese side, seems essential to ensuring high-level political agreement, although by itself it cannot ensure wholly satisfactory outcomes. High-level political action is usually pursued at the ministerial level where the U.S. State Department and the Chinese Ministry of Foreign Affairs (MoFA) interact. It is important to broaden ministerial contacts on export controls to take advantage of interactions between the U.S. Department of Defense and the PLA and between the U.S. Commerce Department and the Chinese Ministry of Foreign Trade and Economic Cooperation (MoFTEC).

To overcome domestic political constraints in the United States and in China, presidential-level commitment will be required in both nations. In the United States, elements of policy influencing China are repeatedly subject to political entanglements arising from the state of relations between China and the United States. High-level political interactions are frequently complicated in China because MoFA, the PLA, and MoFTEC all have different interests. Without a high-level commitment from the presidents of the United States and China, ministerial dialogues will not lead to an effective commitment by China to international export control.

Foster Working-Level Relations

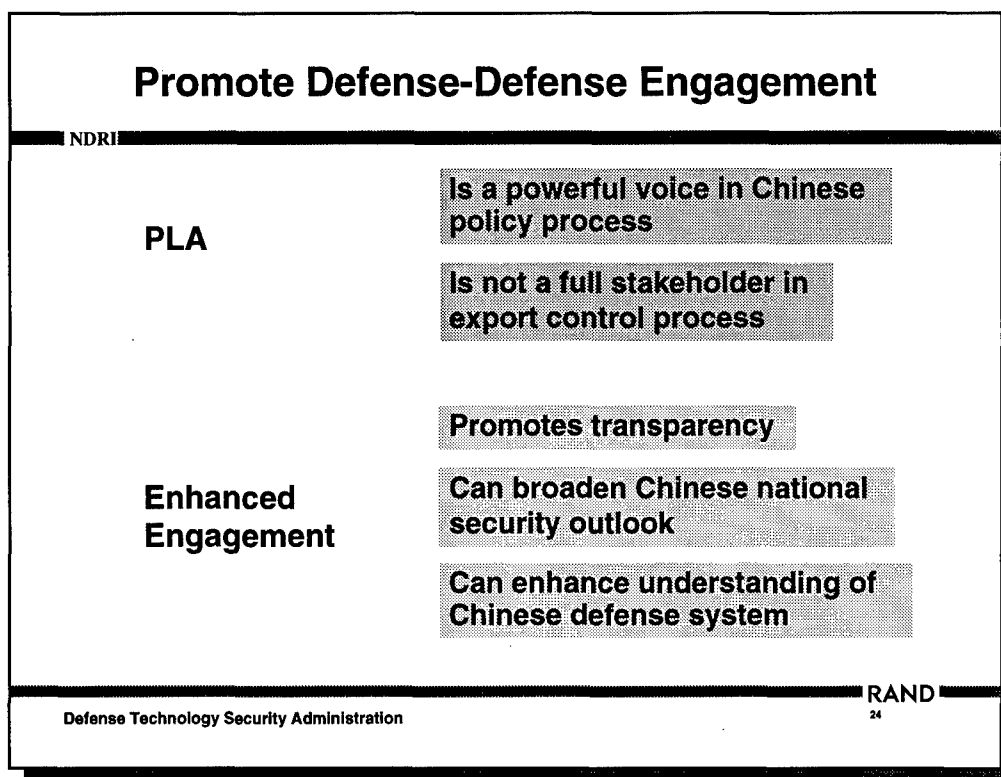
NDRI

- **Export control is technically complex business**
- **Ongoing programs of technical cooperation**
- **Training for Chinese officials**
- **Cooperation between government and high-technology companies**

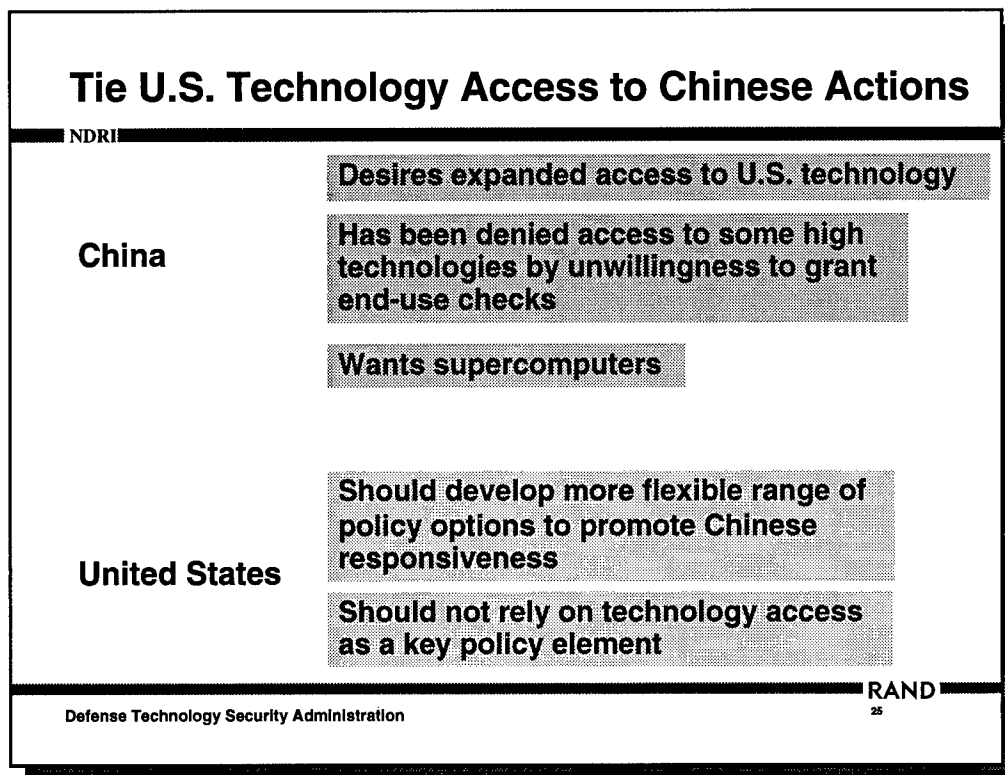
Defense Technology Security Administration

RAND
23

The next strategy we consider is working-level relations. Much of the real work in encouraging deeper and more widespread commitment to export control in China will depend on developing the requisite attitudes and commitments deep within the system. The proliferation of firms with incentives to export technologies that undermine relevant international norms means that monitoring functions and mechanisms must be much more deeply embedded at the enterprise level. There are ample potential payoffs to sustained efforts in this area. For example, because export control is technically very complex, it is natural and necessary to have an ongoing program of technical cooperation to bring together scientists and officials to exchange information and to develop systems, procedures, and expertise in these areas. In addition, the technical working level allows for venues to foster cooperation between high-technology companies and governments. U.S. firms can work with both the U.S. and Chinese governments, just as Chinese firms can work with both governments. All of these interactions will help to build a culture of control in China at all levels.



The next strategy is to promote engagement between the U.S. and Chinese defense establishments. This is necessary because the PLA is a very powerful actor not just in military policy but in national-level policy, including national technology policy. Since the PLA does not presently see itself as a full stakeholder in the export control process, fuller engagement between the U.S. Department of Defense and the PLA organizations could help vest the military leadership more fully as a major participant in the process. In addition, increased engagement will promote greater transparency, broaden China's national-security outlook, and enable a better U.S. understanding of the Chinese defense system as a whole.



Much of present U.S. policy conditions Chinese access to U.S. technology on Chinese behavior in accordance with international norms, including export controls. The Chinese clearly desire much expanded access to high technology goods in the United States, including computer systems and sophisticated machine tools. But for now, the Chinese have been unwilling to grant U.S. agencies the ability to check the end use of sophisticated technologies transferred to Chinese enterprises. As a result, some technologies have been blocked from transfer to China, but these policies are now under review, and there is evidence that some changes are forthcoming. For instance, the Chinese are very interested in acquiring supercomputers, which might be used to enhance China's nuclear program or for civilian uses. Enhanced Chinese access to U.S. technology may also serve to promote Chinese goals of military modernization.

U.S. technology denial options have diminished as other nations develop equally sophisticated technologies, making more diverse supplier sources available. As a result, tying Chinese export activities to enhanced technology access will become increasingly ineffective as a policy option.

Even when U.S. firms have enjoyed some technological leadership, sanctions or the threat of sanctions have frequently proven unsatisfactory as a means of ensuring Chinese compliance. We can therefore envision a more flexible range of policy responses that would give the president and senior policymakers greater latitude in how sanctions could be applied and what imports and exports they might affect.

Involve U.S. Firms with Interests in Chinese Market

NDRI

U.S. Firms

Might assist export control
process to facilitate Chinese
purchases of U.S. technology

Have assisted U.S. Government
in implementing intellectual
property rights agreement

Have substantial interest
in expanded technology
flows

Defense Technology Security Administration

RAND
26

One of the lessons from the negotiation of the intellectual property rights agreement with China is that U.S. firms have a role to play in government-to-government negotiations. In the intellectual property rights negotiations, U.S. firms had a direct financial interest in stopping technology piracy in China, and as a result, it was easier to persuade them to cooperate with the U.S. and Chinese governments to provide technology systems and training to Chinese bureaucrats to enforce intellectual property laws. The connection to export controls should not be much more difficult to make. U.S. firms have a substantial interest in expanding the range of technologies that can be transferred to China. To the extent that U.S. willingness to transfer those technologies depends on linking China more fully to international export controls, U.S. firms have a significant interest in promoting Chinese adherence to international export controls. U.S. technology firms can offer much technical expertise and information systems equipment to Chinese bureaucrats to assist them in developing and enforcing an export control regime. For example, firms may be able to assist in devising better end-user license agreements to enable export of sophisticated technologies to specific customers in China. Involving firms carries some risk, since the objectives of individual companies to sell their products frequently conflict with U.S. government goals to promote U.S. security interests by restraining some transfers.

Include Chinese in International Agreement Negotiations

NDRI

- **Chinese excluded from multilateral framing discussions**
- **Early Chinese participation in new regimes could be crucial to long-term success**
- **Develop joint statements of principles for export control and non-proliferation**
- **Multilateral agreement working sessions reinforce defense-defense ties**

RAND

Defense Technology Security Administration

27

The Chinese have been excluded from an important part of the international rule-making process and denied a seat at the table in negotiating and working out multilateral agreements for export controls. Although the United States has kept China informed about the Wassenaar discussions, the Chinese have not been included formally in the Wassenaar Arrangement discussions. Because they have not had much opportunity to interact with the other national teams, the Chinese have not contributed to joint statements of principle or other measures that could elicit increased Chinese participation.

In addition, the technical sessions in multilateral agreement negotiations are frequently staffed by Defense Department officials, and these sessions are a principal means by which the Defense Department builds professional relations with defense officials from other nations. Since China has no seat at these negotiations, there is no opportunity to develop fuller professional ties between the participants in the U.S. and Chinese defense systems.

U.S. restrictions on military contacts and policy discussions with China following the Tiananmen Square incident have had a profound impact on China's participation in international export control discussions. While the restrictions on military contact with China may have been motivated by sound political reasons in response to events at Tiananmen, these restrictions have hampered the development of the U.S.-China defense relationship as a whole. Without the foundation of early, ongoing discussions, it is much more difficult to ensure subsequent compliance by China. Other countries also have a clear role to play, especially in the domain of defense relations. The process of developing working relationships in the defense area must

necessarily be a multilateral one, since China interacts with many countries in foreign and defense policy. U.S. actions alone will not ensure successful policy outcomes.

Agree on Acceptable Markets and Products

NDRI

- **Develop explicit understanding of acceptable actions by China**
 - **Lists of technologies and systems**
 - **Lists of countries and firms**
- **Bilateral agreements are a partial substitute for participation in multilateral regimes**
- **Demonstrate that United States is not trying to deny legitimate markets for Chinese products, including weapons**

RAND

Defense Technology Security Administration

28

It would be highly desirable to engage China in a multilateral agreement on acceptable markets and products like the international arrangements discussed earlier. Until this option becomes more practicable, another potential strategy is to seek explicit agreement between the United States and China on the technologies and systems that could be sold to specific countries, and to particular enterprises and organizations within those countries. Much of what China exports (including the preponderance of its weapons exports) is of limited strategic value and thus presents few potential challenges to the interests of the United States and of its allies. One purpose of this policy option would be to demonstrate that the United States is not trying to deny all legitimate markets for Chinese products, including weapons.

Urge China to Adopt Hong Kong Export Control Model

NDRI

Hong Kong

Possesses excellent control system

Reverts to China in 1997

China

Has committed to training and cooperation with Hong Kong that will enhance expertise

United States

Can use its relationships in Hong Kong to strengthen professional bureaucracy

RAND

Defense Technology Security Administration

29

An additional option is to use U.S. and allied leverage to take advantage of the opportunities presented by Hong Kong's export control system. Hong Kong has one of the world's best export control systems, which is based on the British system. Although it is admittedly a much smaller system than that of China's and despite Hong Kong's remaining a conduit for numerous illicit trade activities, there is potential value in drawing more fully on Hong Kong's capabilities in the future. The Chinese will inherit this system in 1997, along with the rest of the Hong Kong bureaucracy. China has already committed itself to working more closely with Hong Kong bureaucrats to develop professional relationships and to enhance expertise on both sides. In addition, the export control bureaucracy in Hong Kong is trying to become independent of the British system in advance of the 1997 reversion by developing professional scientific relationships around the world, including very important ones with the United States and European nations. The United States and other nations can use those relationships in Hong Kong to strengthen the professional bureaucracy there and, by extension, to transmit those important bureaucratic systems to China. Should China claim that export control is technically complex and likely to take a great deal of time to implement, the United States and other nations can point out that the Chinese will soon have a model export control system (in Hong Kong) that they can transplant China and develop.

The United States and China May Be in Fundamental Agreement

NDRI

Chinese statements suggest basis for common norms

Chinese assert *"a positive and serious approach toward preventing proliferation of weapons of mass destruction and their delivery systems"*

Arms transfers *"should be conducive to the strengthening of the legitimate defense capabilities of the receiving countries"*

Arms transfers should be *"without harm to regional peace and stability"*

RAND

Defense Technology Security Administration
SOURCE: Information Office of the State Council of the PRC, "China: Arms Control and Disarmament,"
Beijing Review, November 27–December 3, 1995, pp. 17–19.

To conclude the briefing, let us examine some statements of principles by China on arms sales and non-proliferation. China has stated that it takes "a positive and serious approach toward preventing proliferation of weapons of mass destruction and their delivery systems."

China has asserted three principles in its arms transfer policy: (1) transfers "should be conducive to the strengthening of the legitimate defense capabilities of the receiving countries;" (2) transfers should be "without harm to regional peace and stability" and (3) transfers "should not be used to interfere in the internal affairs of sovereign states."

Based on these principles, China defends its arms sales by saying that they are prudent, that the actual number of transfers is small, and that its approach in the Middle East is even more strict than elsewhere in the world. We should not take these principles at face value, but they provide an opportunity for the United States and China to come together and seek agreement on a set of joint principles to which both nations are committed.

Policy Recommendations

NDRI

- **Stress non-proliferation of weapons of mass destruction as shared U.S.–Chinese interest**
- **Achieve broader consensus on policy goals within the U.S. government**
- **Devise regime structures to manage new forms of technology transfer and involve Chinese in the process from the outset**
- **Pursue multi-faceted strategy, combining high-level and working-level approaches**

Defense Technology Security Administration

RAND

31

We conclude with four major recommendations for future U.S. policy. The United States should emphasize shared interests in non-proliferation of weapons of mass destruction in discussions with the Chinese. These shared interests, especially in the nuclear domain, offer a sound basis for extending dialogue to other areas. Building on that emphasis, the U.S. government must work toward a broader internal consensus on policy goals. The United States should respond to the changing nature of technology transfer. Technology transfer is relying increasingly on intellectual content and on smaller subsystems and components rather than finished military systems. These shifts call for new means to manage the flow of technology. In particular, the need for new regimes offers an opportunity to promote Chinese adherence to international export controls. Engaging the Chinese at an early stage of the regime development process will lay a promising foundation for future compliance with international norms. Efforts should be taken in parallel to work with the Chinese to enhance their capabilities for full and effective monitoring of technology flows beyond China's borders.

The U.S. government therefore requires a multi-faceted strategy to increase Chinese commitment to international export controls, working at the high level as well as the working level. The United States should try, wherever feasible, to incorporate other nations into the strategies outlined in this briefing. Other nations can offer additional perspectives and approaches as well as more channels of communication between China and the outside world. While it might be years before a high-level political commitment to export control will include both the United States and China, we need not waste the time between now and then. We can very usefully work at the level

of ministries, military organizations, and enterprises. These working-level relations can serve to increase the professionalization of the Chinese bureaucracy, encourage transparency within China, and bind the Chinese more fully to the concepts, practices, and culture of export control at all levels of the Chinese system.

Table 1

Regimes and Associated Treaties, Agreements, and Organizations

Regime	Formal Treaties	Suppliers Groups and Informal Agreements	International Organizations
Nuclear	Nuclear Proliferation Treaty, 1970 Treaty of Tlateloclo, 1968 Treaty of Rarotonga, 1986 Convention on Physical Protection, 1987 START Protocols	CoCom, 1949 Zangger Committee, 1974 Nuclear Suppliers Group, 1975 Wassenaar Arrangement, 1995	International Atomic Energy Agency UN Conference on Disarmament
Chemical and Biological	Chemical Weapons Convention, 1993 Geneva Protocol, 1925 Biological Weapons Convention, 1975	Australia Group, 1984 CoCom Wassenaar Arrangement	CWC Inspection Organization: OPCW UN Conference on Disarmament
Missiles	Intermediate-range Nuclear Forces (INF) Treaty, 1987	Missile Technology Control Regime, 1987 CoCom Wassenaar Arrangement	

SOURCE: Zachary Davis, *Nonproliferation Regimes: Policies to Control the Spread of Nuclear, Chemical, and Biological Weapons and Missiles*, CRS Report for Congress 93-237 ENR (Washington, D.C.: Congressional Research Service, Library of Congress, Feb. 18, 1993), p. 50.

Table 2

Multilateral Export Control Regimes and Membership as of 1994-95^a

Country	MTCR	AG	NSG	CoCom ^k	Wassenaar ^l
Argentina	•	•	•		
Australia	•	•	•	•	•
Austria	•	•	•	Co-Op	•
Belgium	•	•	•	•	•
Brazil	Co-Op ^b		j		
Bulgaria			•	Co-Op	
Canada	•	•	•	•	•
China, People's Rep.	Co-Op (?) ^c				
Czech Republic		•	•	Co-Op	•
Denmark	•	•	•	•	•
Egypt	Target for Co-Op? ^d				
European Commission		Full Member			
Finland	•	•	•	Co-Op	•
France	•	•	•	•	•
Germany	•	•	•	•	•
Greece	•	•	•	•	•
Hong Kong				Co-Op	
Hungary	•	•	•	Co-Op	•
Iceland	•	•		•	
Indonesia	Target for Co-Op?			Co-Op	
Ireland	•	•	•	Co-Op	•
Israel	Co-Op ^e				
Italy	•	•	•	•	•
Japan	•	•	•	•	•
Khazakhstan				Co-Op	
Latvia				Co-Op	
Lithuania				Co-Op	
Luxembourg	•	•	•	•	•
Malaysia	Target for Co-Op?			Co-Op	
Mongolia				Co-Op	
The Netherlands	•	•	•	•	•

Table 2—continued

Country	MTCR	AG	NSG	CoCom ^k	Wassenaar ^L
New Zealand	•	•	Applied	Co-Op	•
Norway	•	•	•	•	•
Poland		•	•	Co-Op	•
Portugal	•	•	•	•	•
Romania	Co-Op ^f	Applied	•		
Russia	Co-Op ^g		•	Co-Op	•
Singapore	Target for Co-Op?			Co-Op	
Slovak Republic		•	•	Co-Op	•
South Africa	Co-Op ^h		•		
South Korea	Target for Co-Op?			Co-Op	
Spain	•	•	•	•	•
Sweden	•	•	•	Co-Op	•
Switzerland	•	•	•	Co-Op	•
Taiwan	Target for Co-Op?				
Turkey				Co-Op	•
Ukraine	Co-Op ⁱ				
United Kingdom	•	•	•	•	•
United States	•	•	•	•	•

NOTES: Except where otherwise indicated, this table is developed from the following sources: Hugh Beach, "Supply Side Non-Proliferation Organizations," *Bulletin of Arms Control*, No. 16, November 1994, p. 25; "Multilateral Export Control Regimes," BXA/OTPA/NPBA 5/01/94, cited in Evan R. Berlack and Cecil Hunt, co-chairs, *Coping with U.S. Export Controls 1994*, Commercial Law and Practice Course Handbook Series # A-705, Practising Law Institute, 1994; "Fact Sheet: Australia Group," U.S. Arms Control and Disarmament Agency, February 1994; "Fact Sheet: The Missile Technology Control Regime," U.S. Arms Control and Disarmament Agency, November 7, 1994. *Final Declaration of the Wassenaar Arrangement*, December 19, 1995.

^aMTCR, AG, NSG, and CoCom are current as of December 1994, using the sources noted above. Wassenaar includes the initial membership as of December 1995. For all regimes, membership is indicated by •.

^b*Arms Control Reporter* 1994, p. 706.B.168.

^cRecently, China renewed its commitment to the MTCR, expressed in a signed bilateral agreement with the United States in October 1994. However, China has not accepted the revised MTCR guidelines and annex.

^dWith the exception of Egypt, all countries indicated as "MTCR targets for cooperation" are based on unconfirmed statements by Clinton administration sources as reported in "US, MTCR to Train Asian, Middle Eastern Countries on Missile Controls," *Export Control News*, Vol. 8, No. 7 (July 1994), np. Egypt is included as a possible "target for cooperation" based on a Congressional Research Service Report linking Egypt with Argentina, South Korea, and Taiwan as countries that have apparently been persuaded to suspend or curtail missile

development programs with countries of proliferation concern. Robert Shuey in Zachary Davis, coordinator, *Nonproliferation Regimes: Policies to Control the Spread of Nuclear, Chemical, and Biological Weapons and Missiles* (Washington, D.C.: Library of Congress, Congressional Research Service, Feb, 18, 1993), CRS Report for Congress, 93-237-ENR, p. 43.

^eAmy F. Woolf, coordinator, *Arms Control and Disarmament: A Catalog of Recent Activities* (Washington, D.C.: Library of Congress, Congressional Research Service, Jan. 4, 1995), CRS Report for Congress 95-134-F, p. 46.

^f*Ibid.*; *Arms Control Reporter* 1994, p. 250.B.24. At last report, Romania was considering joining the MTCR. *Arms Control Reporter* 1994, p. 706.B.168.

^gGreg Koblentz and Jon B. Wolfsthal, "Russia Agrees to Adhere to MTCR, Suspends Rocket Deal with India," *Arms Control Today*, Vol. 23, No. 7 (Sept. 1993), p. 23.

^h"US, MTCR to Train Asian, Middle Eastern Countries on Missile Controls"; Woolf, *op cit.*; Jon B. Wolfsthal, "U.S., China Reach New Accords on MTCR, Fissile Material Cutoff Issues," *Arms Control Today*, Vol. 24, No. 9 (Nov. 1994), p. 28.

ⁱWoolf, *op cit.*; "Ukraine Agrees to Abide by Missile Export Regime," *Arms Control Today*, Vol. 24, No. 5 (June 1994), p. 31.

^jThe Brazilian Congress was reportedly expected to complete action in late 1994 or early 1995 on export control legislation, enabling it to join the NSG as well as the MTCR. John R. Redick, Julio C. Carasales, and Paulo S. Wrobel, "Nuclear Rapprochement: Argentina, Brazil, and the Nonproliferation Regime," *The Washington Quarterly*, Vol. 16, No. 1 (Winter 1995), p. 110.

^kAll countries listed as Co-op under the heading for CoCom are based on two criteria:

- (1) They have been removed from the CoCom list of proscribed country destinations and/or have been accorded a "presumption of approval" by CoCom;
- (2) They have instituted varying degrees of national export control legislation and mechanisms, as required by section 5(K) of the U.S. Export Administration Act, as amended.

As regards (2), section 5K in effect represents the U.S. effort to pursue CoCom's Third Country Initiative to gain widespread support for export control and non-proliferation policies among non-CoCom states. Source: *Export Administration Regulations* and supplements; the *Federal Register*; *Finding Common Ground*, pp. 66-67 and 68.

^lTaken from the U.S. State Department announcement of the *Final Declaration of the Wassenaar Arrangement*, December 19, 1995.